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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Timothy A. Springer

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EXAMINER

HADDAD, MAHER M

ART UNIT

PAPER NUMBER

1644

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/945,265

Applicant(s)

SPRINGER ET AL.

Examiner

Maher M. Haddad

Art Unit

1644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 77, 78, 80, 84, 87, 88, 105, 106, 114, 115, 128, 133 and 134 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 77, 78, 80, 84, 87, 88, 105, 106, 114, 115, 128, 133 and 134 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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RESPONSE TO APPLICANT'S AMENDMENT

1. Applicant's amendment, filed 2/14/06, is acknowledged.
2. Claims 77, 78, 80, 84, 87, 88, 105, 106, 114, 115, 128, 133 and 134 are pending and under examination in the instant application.
3. In view of the amendment filed on 6/5/06, only the following rejections are remained.
4. The specification stands objected to for the following discrepancies: the specification on page 28 discloses that the α L K287C/K294C mutant is a modified α L polypeptide, wherein there is a change in the amino acid sequence of α L (SEQ ID NO:2) such that amino acid residues 287 and 294 are substituted with cysteine residues. The corresponding wild-type nucleotide sequence, SEQ ID NO:1, is modified at nucleotide residues 1022-1024 and 1043-1045, respectively. However, there is no corresponding amino acids at positions 284, 287, 289, 294, 301 of SEQ ID NO: 2. The amino acid at positions 284, 287, 289, 294, 301 of SEQ ID NO: 2 are I (Ile), G (Gly), H (His), E (Glu) and K (lys), respectively. Further table 9, discloses several mutation in the α L that do not correspond to the amino acid number in SEQ ID NO:2. Corrections/clarifications are required.

The Declaration of Dr. Shimaoka under 37 C.F.R 1.132 filed 6/5/06 is insufficient to overcome the objection to the specification because the Declaration Dr. Shimaoka refers to published sequences to distinguish between the disclosed mature LFA-1 of SEQ ID NO: 2 (lacks 25 amino acids) and the used LFA-1 in the specification is based on published precursor LFA-1 because Dr. Shimaoka's declaration does not provide evidence that the mature α L is 25 amino acids less than the precursor protein. No reference has been provided to show that the mature α L protein lacks 25 amino acids when compared to the precursor protein.

5. Claim 78 was inadvertently not included in the rejections of the previous office action mailed on 2/14/06. Since claim 78 depends from claim 84 wherein the enablement and written description issues are focused, claim 78 should be included in both rejections.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 77, 78, 80, 84, 87-88, 105-106, 114-115, 128 and 133-134 stand rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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The specification does not reasonably provide enablement for an antibody, or antigen binding fragment thereof, which binds to an integrin I-domain of any α L integrin of SEQ ID NO:2, the I-domain being locked in the open conformation by the substitutions E284C/E301C or K287C/K294C but not to a modified integrin I-domain that is locked in the closed conformation by the substitutions L289C/K294C in claim 84, wherein the I-domain in the open conformation comprises substitutions E284C/E301C in an α L subunit in claim 87, wherein the I-domain in the open conformation comprises substitutions K287C/K294C in an α L subunit in claim 88, or a recombinant antibody, or an antigen binding fragment thereof, which binds to an integrin I-domain of any α L integrin of SEQ ID NO: 2, the I-domain being locked in the open conformation by the substitutions E284C/E301C but not to an modified α L integrin I-domain that is locked in the closed conformation by the substitutions L289C/K294C, wherein the antibody or antigen binding fragment thereof blocks interaction between LFA-1 and ICAM-1 in claim 133 or a recombinant antibody, or an antigen binding fragment thereof, which binds to an integrin I-domain of any α L integrin of SEQ ID NO: 2, the I-domain being locked in the open conformation by the substitutions K287C/K294C but not to an modified α L integrin I-domain that is locked in the closed conformation by the substitutions L289C/K294C, wherein the antibody or antigen binding fragment thereof blocks interaction between LFA-1 and ICAM-1 in claim 134. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with this claim for the same reasons set forth in the previous Office Action mailed 2/14/06.

Applicant's arguments, filed 6/5/06, have been fully considered, but have not been found convincing.

Applicant points to Dr. Shimaoka's declaration which, states that the precursor proteins and mature proteins for the α L and α M proteins have different lengths. That is the protein sequences shown in SEQ ID NO: 2 and SEQ ID NO: 4 are the amino acid sequences of the precursor proteins, while the numbering system used for the mutants is based on the corresponding mature protein. The precursor protein for SEQ ID NO: 2 includes 25 additional amino acids, as compared with the mature protein, while the precursor protein for SEQ ID NO: 4 includes 16 additional amino acids, as compared to the mature protein. Applicant concludes that the corresponding amino acids for the mutations can be calculated by adding either 16 or 25 to the respective precursor protein sequence.

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). See MPEP 2145. The instant claim language still recites specific amino acid substitutions that do not correspond to the amino acid positions claimed SEQ ID NO: 2. The mature α L sequence is not part of the claimed invention. The skilled in the art would not know how to make such substations when there are no correspondent amino acids in the α L integrin and hence would not know how to make the claimed antibody.

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8. Claims 77, 78, 80, 84, 87-88, 105-106, 114-115, 128 and 133-134 stand rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the same reasons set forth in the previous Office Action mailed 2/14/06.

Applicant's arguments, filed 6/5/06, have been fully considered, but have not been found convincing.

Applicant provides that same argument under the enablement rejection.

The Examiner position is the same as above.

9. The following new ground of rejection is necessitated by the amendment submitted 6/5/06.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 77, 78, 80, 84, 87, 88, 105, 106, 114, 115, 128, 133 and 134 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 84, 133 and 134 are indefinite and ambiguous because the claimed substitutions E284C/E301C or K287/K294C and L289C/K294C do not correspond to the amino acid positions in SEQ ID NO: 2.

12. No claim is allowed.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maher Haddad whose telephone number is (571) 272-0845. The examiner can normally be reached Monday through Friday from 7:30 am to 4:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 29, 2006



Maher Haddad, Ph.D.
Patent Examiner